WHAT IS CLAIMED IS:

1. An image sensor comprising:

(a) a plurality of pixels;

(b) a color filter pattern spanning at least a portion of the pixels, wherein the color filter pattern forms a color filter kernel having colors in a predetermined arrangement; and

(c) a mechanism for controlling integration time of the pixels, wherein the integration time of the plurality of pixels is spatially variant in a pattern that is correlated with the color filter array kernel.

2. The image sensor as in claim 1, wherein the color filter pattern is a Bayer color filter pattern.

3. The image sensor as in claim 1, wherein the color filter pattern is a 2x2 kernel.

4. The image sensor as in claim 3, wherein the integration time pattern is an alternating pattern of two lines at one integration time and adjacent two lines at a second integration time.

5. The image sensor as in claim 3, wherein the integration time for a first set of 2x2 pixels associated with a first kernel is at a first integration time, and the integration time of adjacent 2x2 kernels in the same set of two lines at a second integration time.

6. The image sensor as in claim 5, wherein the integration time pattern of adjacent two lines groups is offset by two pixels.

7. The image sensor of claim 1 wherein the integration time pattern is a multiple of the color filter kernel.

8. An image sensor comprising:

(a) a plurality of pixels arranged in an array of rows and columns; and

(b) a readout mechanism that provides a series of output signal values associated with a row sync signal with a number of data signal values corresponding to a number of pixels in a row or desired portion of a row; wherein the output signal values have signals that are generated from pixels within at least two physically separate rows within the array.

9. A camera comprising:

(a) an image sensor comprising:

(a1) a plurality of pixels;

(a2) a color filter pattern spanning at least a portion of the pixels, wherein the color filter pattern forms a color filter kernel having colors in a predetermined arrangement; and

(a3) a mechanism for controlling integration time of the pixels, wherein the integration time of the plurality of pixels is spatially variant in a pattern that is correlated with the color filter array kernel.

10. The camera as in claim 9, wherein the color filter pattern is a Bayer color filter pattern.

11. The camera as in claim 9, wherein the color filter pattern is a 2x2 kernel.

12. The camera as in claim 11, wherein the integration time pattern is an alternating pattern of two lines at one integration time and adjacent two lines at a second integration time.

13. The camera as in claim 11, wherein the integration time for a first set of 2x2 pixels associated with a first kernel is at a first integration time, and

the integration time of adjacent 2x2 kernels in the same set of two lines at a second integration time.

14. The camera as in claim 13, wherein the integration time pattern of adjacent two lines groups is offset by two pixels.

15. The camera as in claim 1, wherein the integration time pattern is a multiple of the color filter kernel.

16. The camera as in claim 9 further comprising a mechanism that reads out at least a subset of the plurality of pixels and uses the signal values obtained from the readout to determine the integration times of the plurality of pixels.

17. A camera comprising:

(a) an image sensor comprising:

(b) a plurality of pixels arranged in an array of rows and columns; and

(c) a readout mechanism that provides a series of output signal values associated with a row sync signal with a number of data signal values corresponding to a number of pixels in a row or desired portion of a row; wherein the output signal values have signals that are generated from pixels within at least two physically separate rows within the array.

18. The camera as in claim 17, wherein the data values are reconstructed in the camera memory.